WEST Search History

DATE: Thursday, October 24, 2002

Set Name side by side	**Query**	**Hit Count**	**Set Name** result set
DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=OR			
L13	l5 same l6	1	L13
L12	l10 and l11	134	L12
L11	angle	1647618	L11
L10	l5 and l8	538	L10
L9	l7 and l8	7	L9
L8	0001	25553807	L8
L7	l5 and l6	7	L7
L6	direction near angle	47016	L6
L5	l3 adj l4	542	L5
L4	substrate	1469478	L4
L3	l1 or l2	11840	L3
L2	gan	9826	L2
L1	gallium adj nitride	4133	L1

END OF SEARCH HISTORY

L6 ANSWER 7 OF 30 INSPEC COPYRIGHT 2002 IEE
AN 2002:7137129 INSPEC DN A2002-03-8115H-056; B2002-02-0520F-023
TI Homo-epitaxial growth on misoriented **GaN** substrates by MOCVD.
AU Zauner, A.R.A.; Schermer, J.J.; van Enckevort, W.J.P.; Kirilyuk, V. (Res. Inst. for Mater., Nijmegen Univ., Netherlands); Weyher, J.L.; Grzegory, I.; Hageman, P.R.; Larsen, P.K.
SO GaN and Related Alloys - 1999. Symposium (Materials Research Society Symposium Proceedings Vol.595)
Editor(s): Myers, T.H.; Feenstra, R.M.; Shur, M.S.; Amano, H.
Warrendale, PA, USA: Mater. Res. Soc, 2000. p.W6.3.1-6 of xxvii+10002 pp. 12 refs.
Conference: Boston, MA, USA, 28 Nov-3 Dec 1999
ISBN: 1-55899-503-X
DT Conference Article
TC Experimental
CY United States
LA English
AB The N-side of **GaN** single crystals with off-**angle** orientations of 0 degrees , 2 degrees and 4 degrees towards the [1010] **direction** was used as a substrate for homoepitaxial MOCVD growth. The highest misorientation resulted in a reduction of the density of grown hillocks by almost two orders of magnitude as compared with homoepitaxial films grown on the exact (0001) surface. The features still found on the 4 degrees misoriented sample after growth can be explained by a model involving the interaction of steps, introduced by the misorientation and the hexagonal hillocks during the growth process.
CC A8115H Chemical vapour deposition; A6855 Thin film growth, structure, and epitaxy; A6150J Crystal morphology and orientation; A6820 Solid surface structure; B0520F Chemical vapour deposition; B2520D II-VI and III-V semiconductors
CT CRYSTAL ORIENTATION; GALLIUM COMPOUNDS; III-V SEMICONDUCTORS; MOCVD; SEMICONDUCTOR EPITAXIAL LAYERS; SEMICONDUCTOR GROWTH; SUBSTRATES; SURFACE TOPOGRAPHY; VAPOUR PHASE EPITAXIAL GROWTH; WIDE BAND GAP SEMICONDUCTORS
ST **misoriented GaN substrates**; homoepitaxial growth; MOCVD; density reduction; hexagonal hillocks; crystal orientation; (0001) surface; step interactions; **GaN**
CHI GaN sur, Ga sur, N sur, GaN bin, Ga bin, N bin
ET Ga*N; GaN; Ga cp; cp; N cp; N; V; Ga

L6 ANSWER 8 OF 30 INSPEC COPYRIGHT 2002 IEE
AN 2001:7071226 INSPEC DN A2001-23-6180M-001
TI Channeling contrast microscopy on lateral epitaxial over-grown **GaN**
.
AU Teo, E.J.; Osipowicz, T.; Bettiol, A.A.; Watt, F. (Dept. of Phys., Nat. Univ. of Singapore, Singapore); Hao, M.S.; Chua, S.J.
SO Nuclear Instruments & Methods in Physics Research, Section B (Beam Interactions with Materials and Atoms) (July 2001) vol.181, p.231-7. 11 refs.
Doc. No.: S0168-583X(01)00460-8
Published by: Elsevier
Price: CCCC 0168-583X/2001/$20.00
CODEN: NIMBEU ISSN: 0168-583X
SICI: 0168-583X(200107)181L.231:CCML;1-D
Conference: 7th International Conference on Nuclear Microprobe Technology and Applications. Bordeaux, France, 10-15 Sept 2000
DT Conference Article; Journal

L6 ANSWER 5 OF 30 INSPEC COPYRIGHT 2002 IEE

AN 2002:7324973 INSPEC DN A2002-17-8115H-005; B2002-08-0520F-032

TI Homo-epitaxial growth on the N-face of **GaN** single crystals: the influence of the misorientation on the surface morphology.

AU Zauner, A.R.A.; Aret, E.; van Enckevort, W.J.P.; Weyher, J.L. (Res. Inst. for Mater., Nijmegen Univ., Netherlands); Porowski, S.; Schermer, J.J.

SO Journal of Crystal Growth (April 2002) vol.240, no.1-2, p.14-21. 18 refs.
Doc. No.: S0022-0248(01)02389-2
Published by: Elsevier
Price: CCCC 0022-0248/02/$22.00
CODEN: JCRGAE ISSN: 0022-0248
SICI: 0022-0248(200204)240:1/2L.14:HEGF;1-7

DT Journal

TC Experimental

CY Netherlands

LA English

AB **GaN** single crystals are used as substrates for homo-epitaxial growth by MOCVD. Prior to growth, the N-face, or (0001) plane, of the substrate crystals is polished to obtain off-**angle** orientations of 0, 2, and 4 degrees towards the [1120] **direction**. The hillock density of the homo-epitaxial films grown on the misoriented substrates is decreased as compared with the layers grown on the exact N-face. However, in addition to the hillocks, triangular-shaped pits are formed on the films grown on the misoriented substrates. The formation of the triangular-shaped pits is described by the blocking of the anisotropic step-flow growth.

CC A8115H Chemical vapour deposition; A6855 Thin film growth, structure, and epitaxy; A6820 Solid surface structure; A8160C Surface treatment and degradation in semiconductor technology; B0520F Chemical vapour deposition; B2520D II-VI and III-V semiconductors; B2550E Surface treatment (semiconductor technology)

CT CRYSTAL ORIENTATION; GALLIUM COMPOUNDS; III-V SEMICONDUCTORS; MOCVD; POLISHING; SEMICONDUCTOR EPITAXIAL LAYERS; SEMICONDUCTOR GROWTH; SURFACE STRUCTURE; SURFACE TOPOGRAPHY; VAPOUR PHASE EPITAXIAL GROWTH; WIDE BAND GAP SEMICONDUCTORS

ST N-face; **GaN single crystals**; misorientation; surface morphology; substrates; homo-epitaxial growth; MOCVD; **off-angle orientations** ; hillock density; homo-epitaxial films; misoriented substrates; triangular-shaped pits; blocking; anisotropic step-flow growth; polished surface; **GaN**

CHI GaN sur, Ga sur, N sur, GaN bin, Ga bin, N bin

ET N; Ga*N; GaN; Ga cp; cp; N cp; V; Ga

L6 ANSWER 15 OF 30 INSPEC
AN 2000:6619413 INSPEC DN A2000-14-8115H-048; B2000-07-0520F-063
TI Homo-epitaxial **GaN** growth on exact and misoriented single crystals: suppression of hillock formation.
AU Zauner, A.R.A.; Weyher, J.L.; Plomp, M.; Kirilyuk, V. (Res. Inst. for Mater., Nijmegen Univ., Netherlands); Grzegory, I.; van Enckevort, W.J.P.; Schermer, J.J.; Hageman, P.R.; Larsen, P.K.
SO Journal of Crystal Growth (March 2000) vol.210, no.4, p.435-43. 20 refs.
Doc. No.: S0022-0248(99)00886-6
Published by: Elsevier
CODEN: JCRGAE ISSN: 0022-0248
SICI: 0022-0248(200003)210:4L.435:HEGE;1-X
DT Journal
TC Experimental
CY Netherlands
LA English
AB **GaN** single crystals were used as substrates for MOCVD growth. The (0001) plane of the substrate crystals was polished to obtain off-**angle** orientations of 0, 2, and 4 degrees towards the [1010] **direction**. The highest misorientation resulted in a reduction of the hexagonal hillock density by nearly two orders of magnitude as compared with homo-epitaxial films grown on the exact (0001) surface. The features that are still found on the 4 degrees off-**angle** sample after growth can be explained by a model involving the interaction of steps, introduced by the misorientation, and the hexagonal hillocks during the growth process. Following from this explanation it could be concluded that surface diffusion is found to be not important during growth on the N-side. The material quality of the N-side was examined by photoluminescence (PL) measurements. The PL spectrum measured at 5 K shows dominant donor bound excitons with a FWHM of 1.4 meV as well as free excitonic transitions.
CC A8115H Chemical vapour deposition; A6855 Thin film growth, structure, and epitaxy; A6820 Solid surface structure; A7865K Optical properties of III-V and II-VI semiconductors (thin films/low-dimensional structures); A7855E Photoluminescence in II-VI and III-V semiconductors; A7135 Excitons and related phenomena; B0520F Chemical vapour deposition; B2520D II-VI and III-V semiconductors
CT ATOMIC FORCE MICROSCOPY; EXCITONS; GALLIUM COMPOUNDS; III-V SEMICONDUCTORS; MOCVD; MOCVD COATINGS; PHOTOLUMINESCENCE; SEMICONDUCTOR EPITAXIAL LAYERS; SEMICONDUCTOR GROWTH; SURFACE STRUCTURE; VAPOUR PHASE EPITAXIAL GROWTH; X-RAY DIFFRACTION
ST homoepitaxial growth; MOCVD growth; metalorganic chemical vapour deposition growth; substrate misorientation; epitaxial films; photoluminescence; free excitonic transitions; semiconductor growth; III-V semiconductors; surface morphology; AFM; atomic force microscopy; XRD; X-ray diffraction; 1040 C; 50 mbar; 5 K; **GaN**
CHI GaN bin, Ga bin, N bin
PHP temperature 1.31E+03 K; pressure 5.0E+03 Pa; temperature 5.0E+00 K
ET Ga*N; GaN; Ga cp; cp; N cp; N; V; Ga